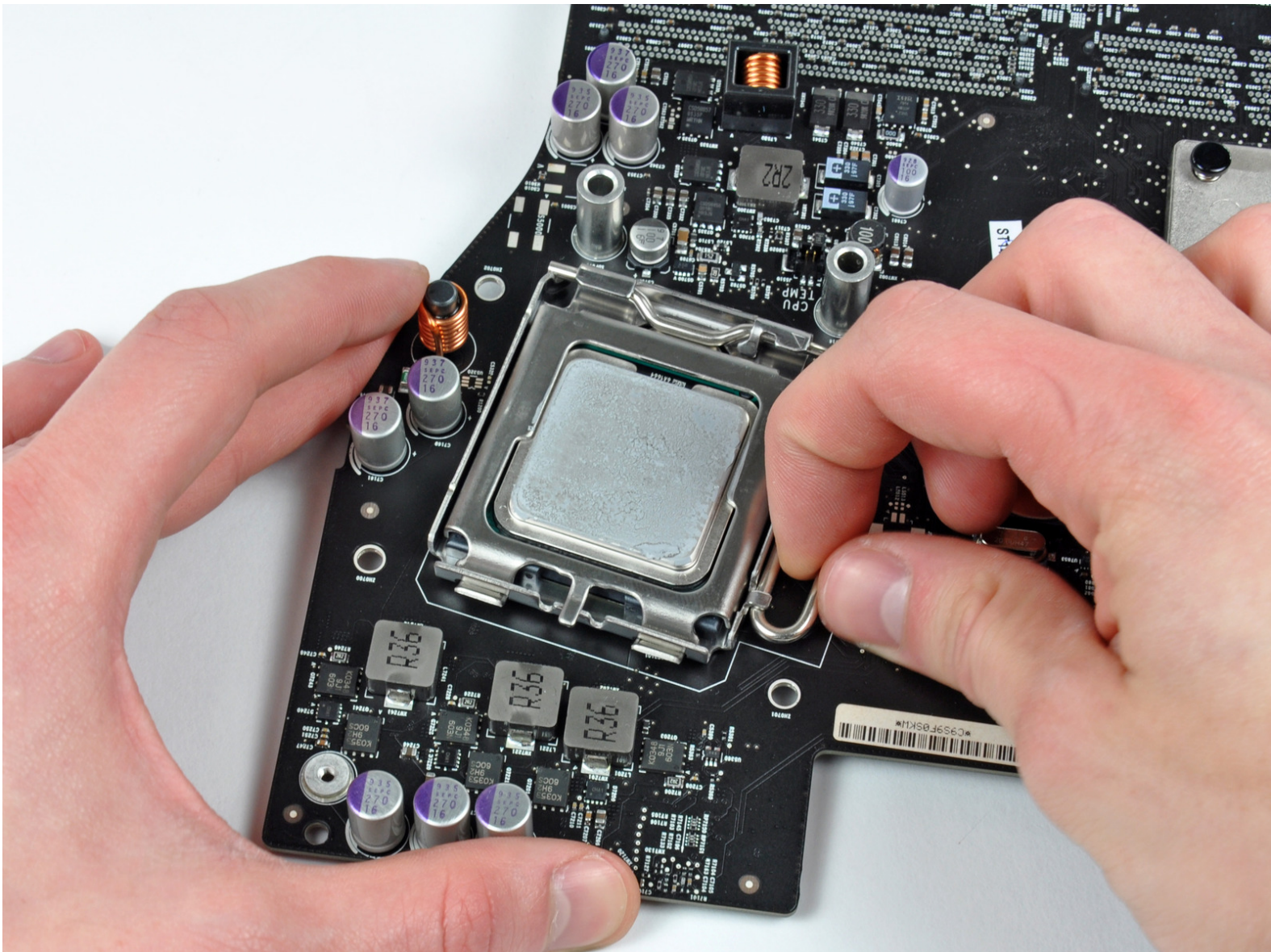




iMac Intel 21.5" EMC 2308 CPU Replacement

Replace the CPU in your iMac Intel 21.5".

Written By: Andrew Bookholt



INTRODUCTION

Use this guide to upgrade your CPU.



TOOLS:

- [Arctic Silver ArctiClean](#) (1)
 - [Arctic Silver Thermal Paste](#) (1)
 - [Heavy-Duty Suction Cups \(Pair\)](#) (1)
 - [Metal Spudger](#) (1)
 - [Phillips #1 Screwdriver](#) (1)
 - [Spudger](#) (1)
 - [T10 Torx Screwdriver](#) (1)
 - [T8 Torx Screwdriver](#) (1)
 - [Tweezers](#) (1)
-

Step 1 — Access Door



- Loosen the three Phillips screws securing the access door to the bottom edge of your iMac.
- ⓘ These screws will remain captive in the access door.
- Remove the access door from your iMac.
- ★ During reassembly, fasten the access door loosely and align it with the pocket cut into the outer case of the iMac before fully tightening the screws.

Step 2 — Glass Panel



- ⓘ Before beginning, unplug your iMac and lay it on a soft surface as shown.
 - Stick a suction cup near each of the two top corners of the glass panel.
- ⓘ To attach the [suction cups](#) we sell, first position the suction cup with the movable handle parallel to the face of the glass panel. While lightly holding the suction cup against the glass, raise the movable handle until it is parallel with the other handle.
- If your suction cups refuse to stick, try cleaning both the glass panel and the suction cup with a mild solvent.

Step 3



- Gently lift the glass panel perpendicular to the face of the LCD enough to clear the steel mounting pins attached along the underside of the top edge of the glass panel.
 - Pull the glass panel away from the lower edge of the iMac and carefully set it aside.
- ✦ During reinstallation, be sure to meticulously clean the inside of the glass panel and the face of the LCD as any dust or fingerprints trapped inside will be annoyingly visible when the machine is turned on.

Step 4 — Display



- Remove the eight 8 mm T10 Torx screws securing the display to the outer case.
- i** The last two pictures are detail shots of each side of the display.

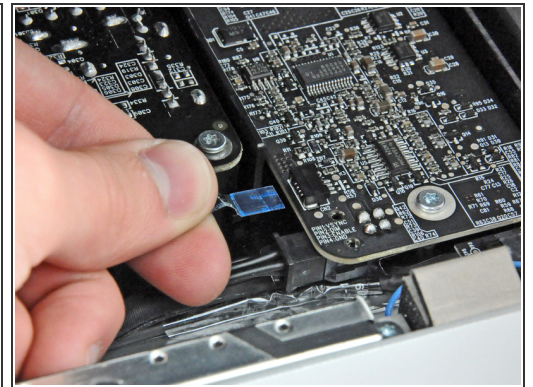
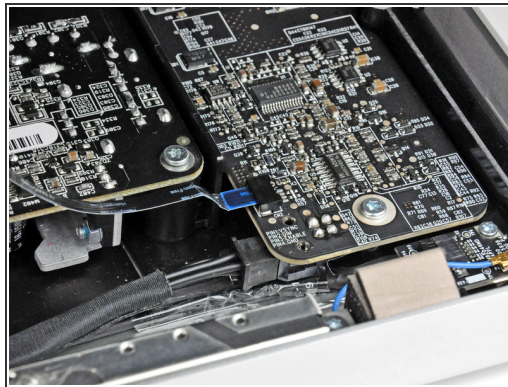
Step 5



- Slightly lift the top edge of the display out of the outer case.

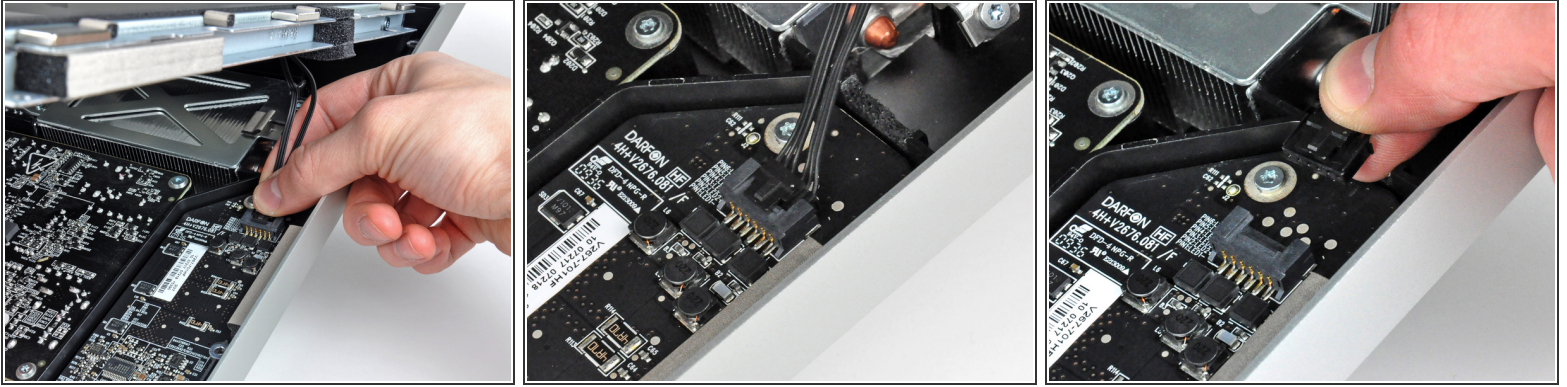
⚠ Do not lift it too much. There are several cables attaching the display to the logic board.

Step 6



- Pull the vertical sync ribbon cable out of its socket on the LED driver board near the top left corner of your iMac.
- i** The vertical sync ribbon cable has a ZIF style end, but the socket has no lock or retaining flap. Simply pull the cable away from its socket toward the optical drive side of the iMac to disconnect it from the LED driver board.

Step 7



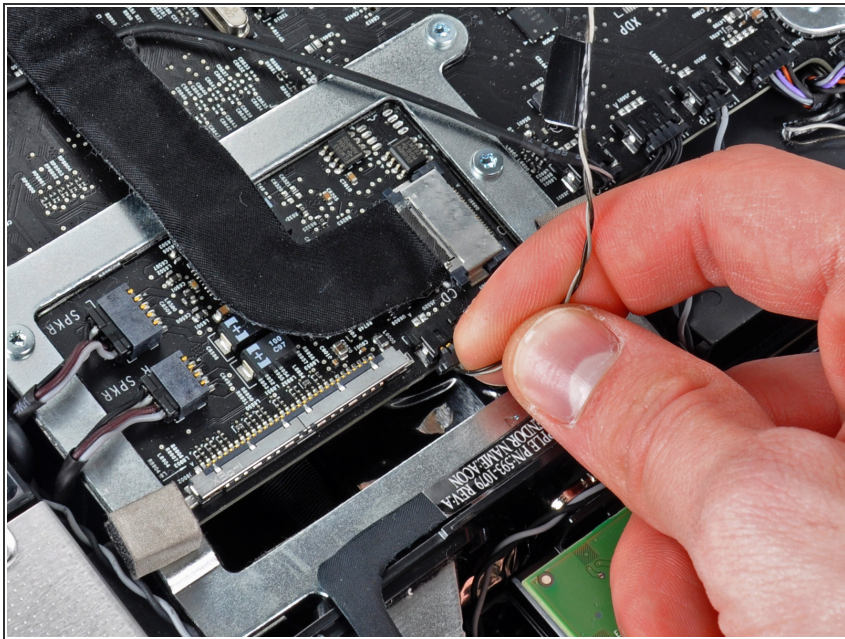
- Rotate the display out of the outer case enough to disconnect the LED backlight power cable from the LED driver board.
- ① Disconnect the LED backlight power cable by depressing the locking mechanism while pulling the connector away from its socket (toward the bottom edge of the iMac).

Step 8



- Squeeze the two display data cable connector arms together to unlock it from its socket on the logic board.
- Pull the display data cable connector away from its socket on the logic board.

Step 9



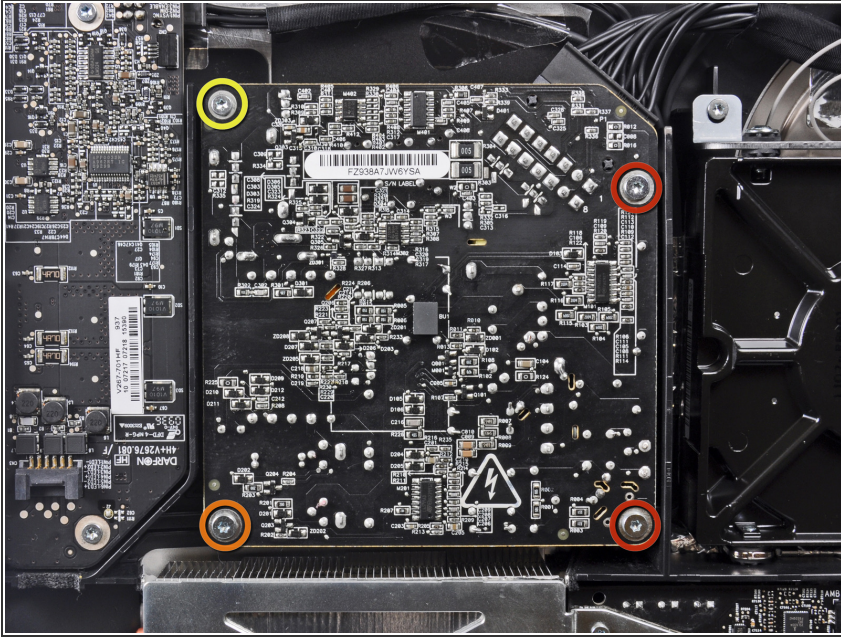
- Disconnect the LCD thermal sensor cable connector from its socket on the logic board.
- ⓘ If your fan is spinning full speed after completion, check this connection or the hard drive's thermal sensor cable.

Step 10



- Carefully pull the display toward the top edge of your iMac and lift it out of the outer case, minding any cables that may get caught.

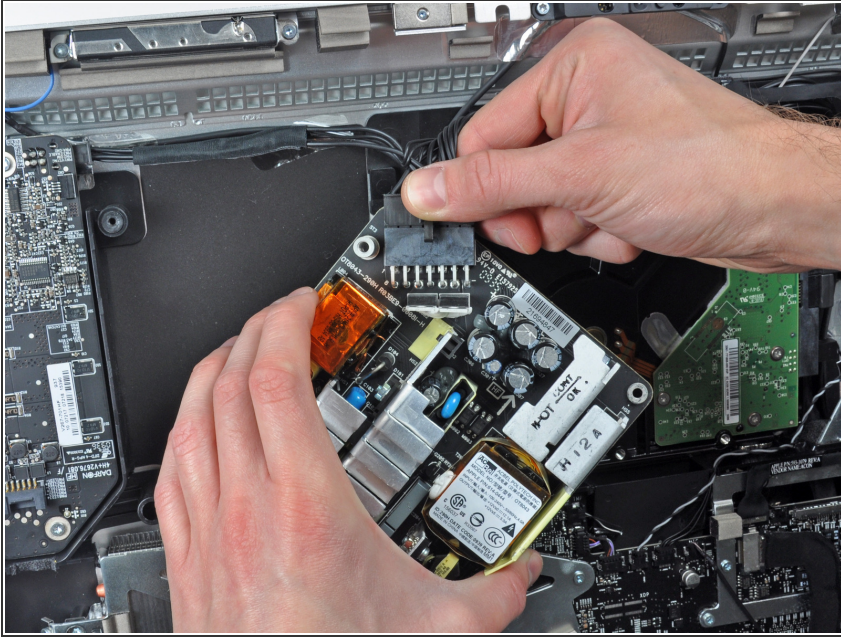
Step 11 — Power Supply



- Remove the following four screws securing the power supply to the outer case:
 - Two 22.2 mm fine-thread T10 Torx
 - One 25 mm coarse-thread T10 Torx
 - One 9 mm coarse-thread T10 Torx

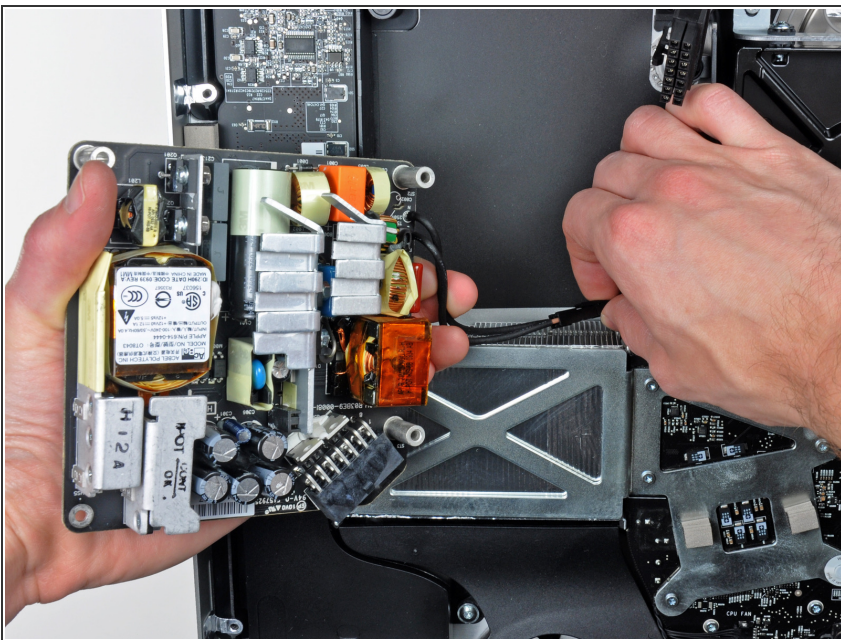
⚠ The next few steps bring your hands close to the exposed face of the power supply. To avoid a high voltage shock from the many large capacitors attached to the board, **do not** touch the face of the power supply.

Step 12



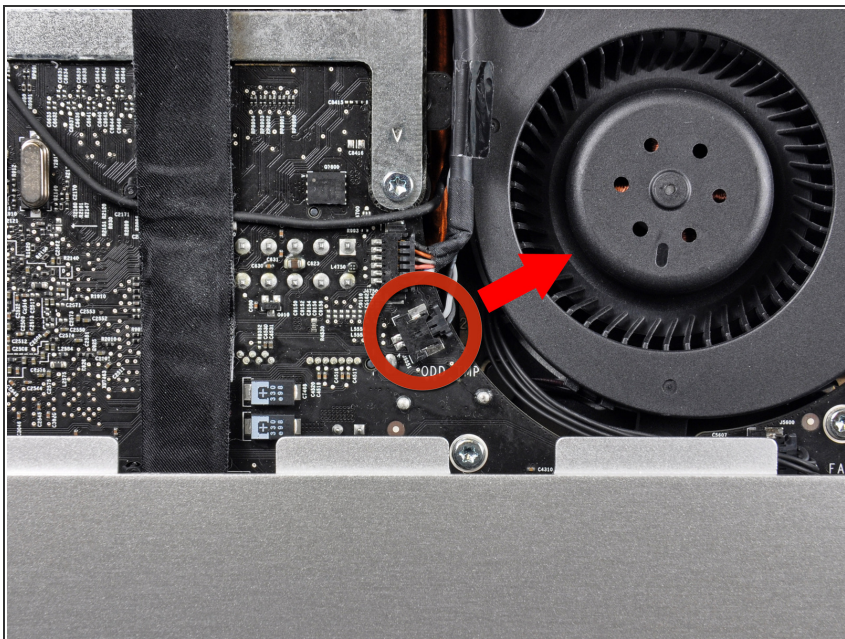
- Carefully lift the power supply out of the outer case and rotate it to expose the cable lock as shown, minding the DC-Out cable still attaching it to the iMac.
- Disconnect the DC-In cable by depressing the locking mechanism on the connector while you pull the connector away from its socket on the power supply.
- Once the locking mechanism has cleared the socket, pull the DC-In connector away from the power supply.

Step 13



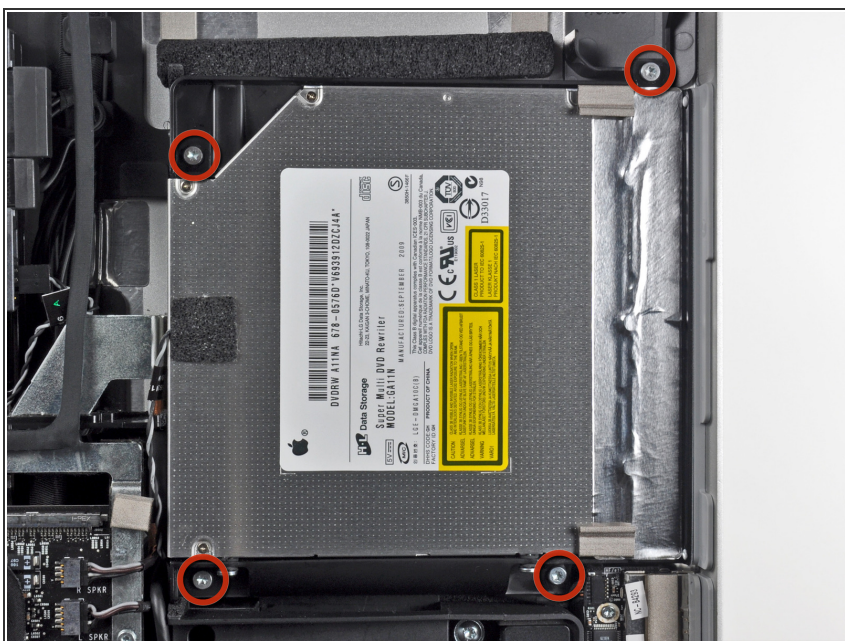
- Disconnect the AC-In cable by depressing the locking mechanism while pulling the connector away from its socket.
- Remove the power supply from the outer case.

Step 14 — Optical Drive



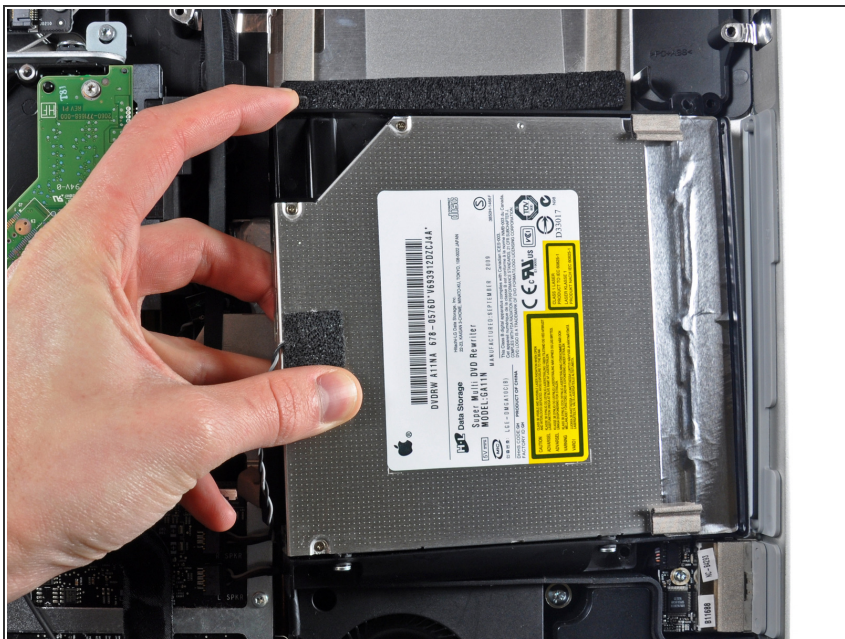
- Pull the optical drive thermal sensor connector straight away from its socket on the logic board.

Step 15



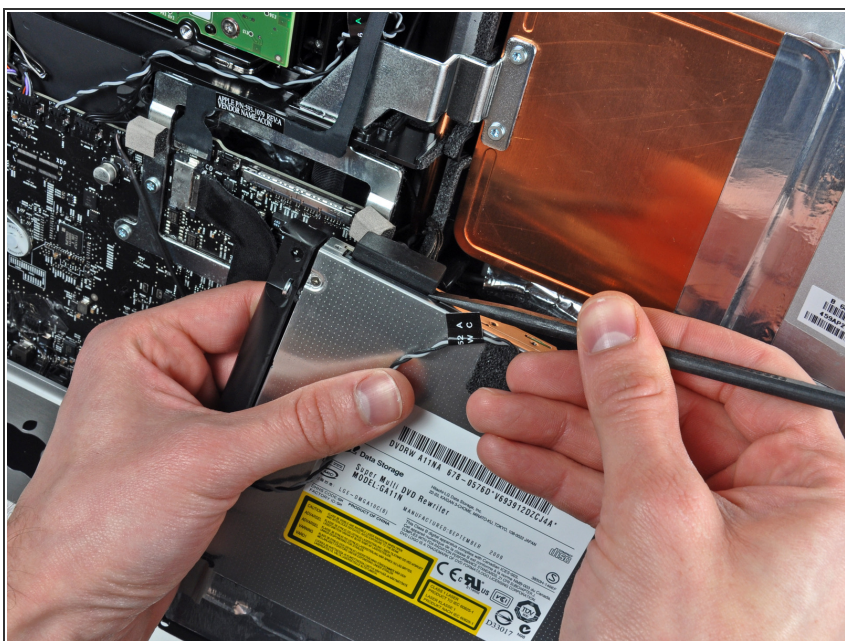
- Remove the four 9 mm T10 Torx screws securing the optical drive to the outer case.

Step 16



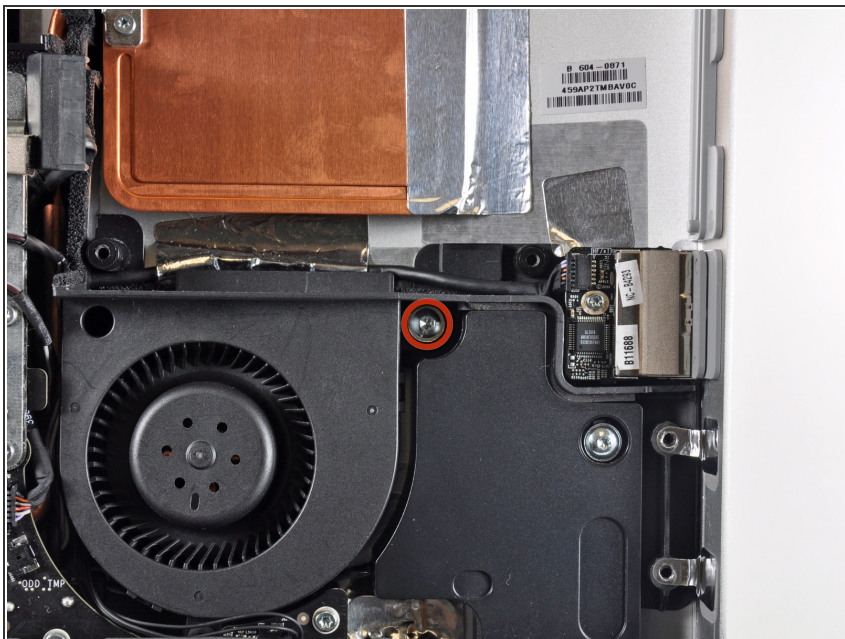
- Lift the inner edge of the optical drive and maneuver its connector past the frame attached to the logic board.
- Carefully pull the optical drive off its mounting pins on the edge of the outer case to gain clearance for disconnecting the optical drive cable.

Step 17



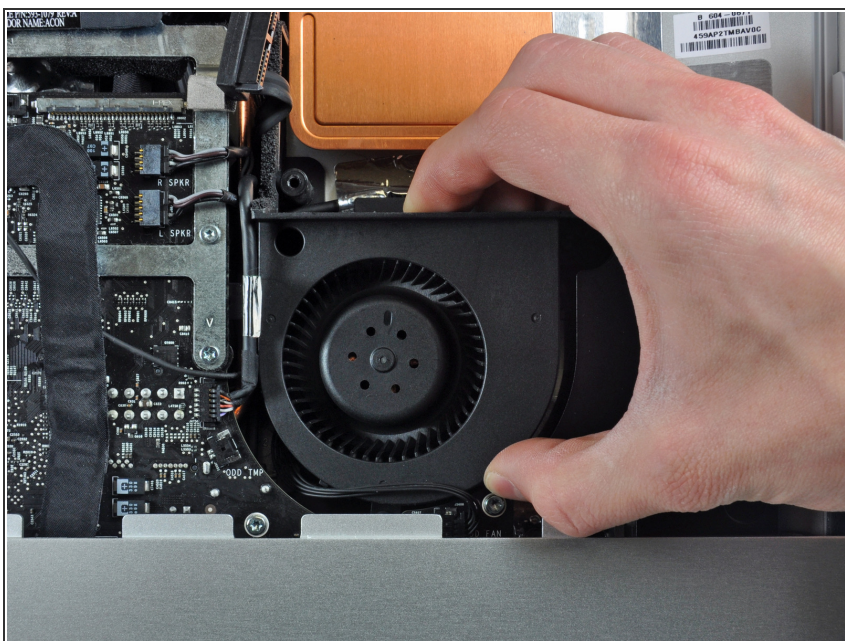
- Use the flat end of a spudger to help disconnect the optical drive cable.

Step 18 — Optical Drive Fan



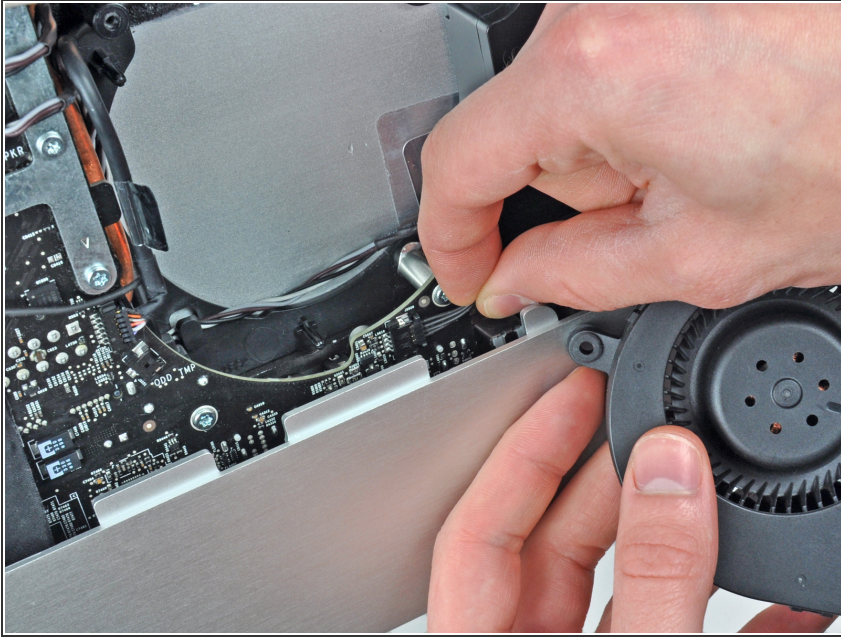
- Remove the single 13 mm T10 Torx screw securing the optical drive fan to the outer case.

Step 19



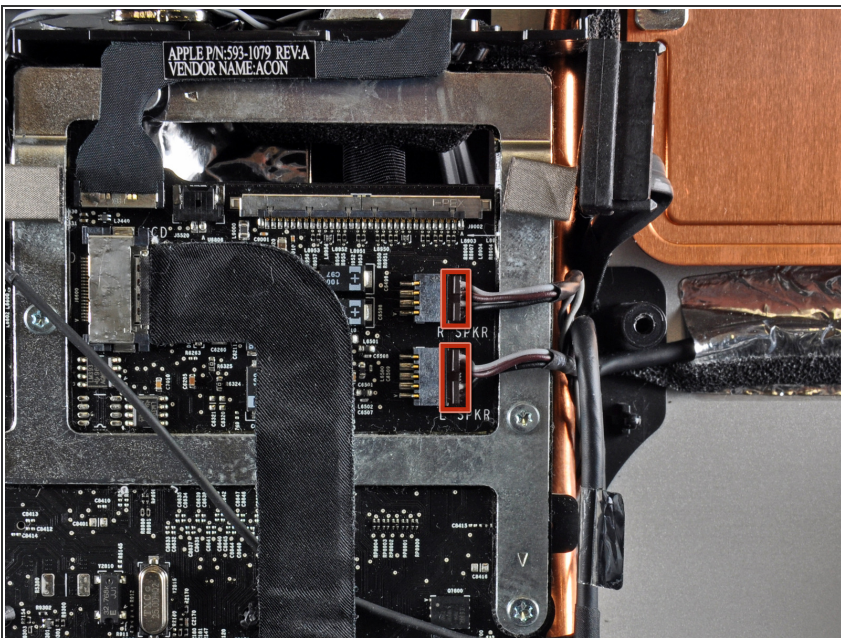
- Pull the optical drive off the pins attached to the outer case.

Step 20



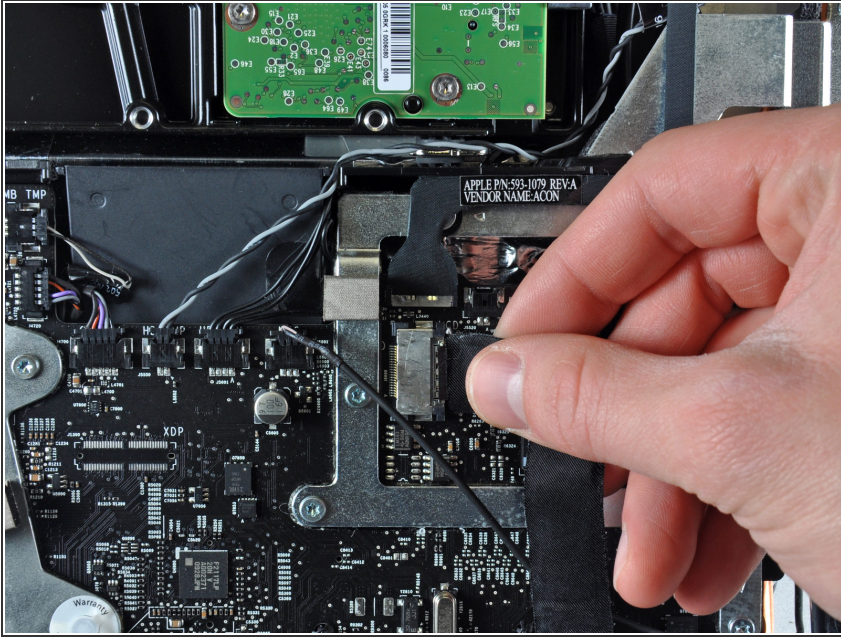
- Pull the optical drive fan connector away from its socket on the logic board.
- Remove the optical drive fan from the iMac.

Step 21 — Logic Board



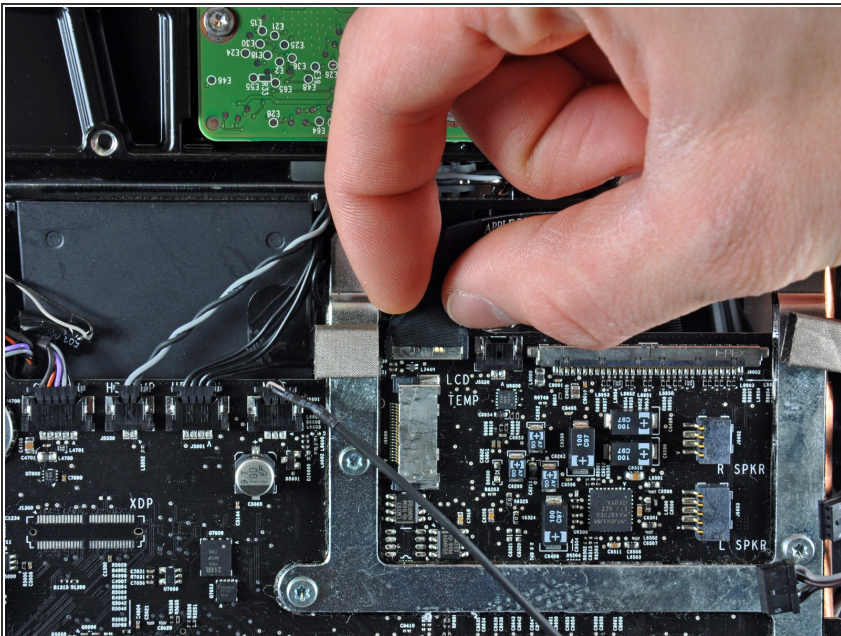
- Pull the left and right speaker connectors toward the right side of the iMac to disconnect them from the logic board.

Step 22



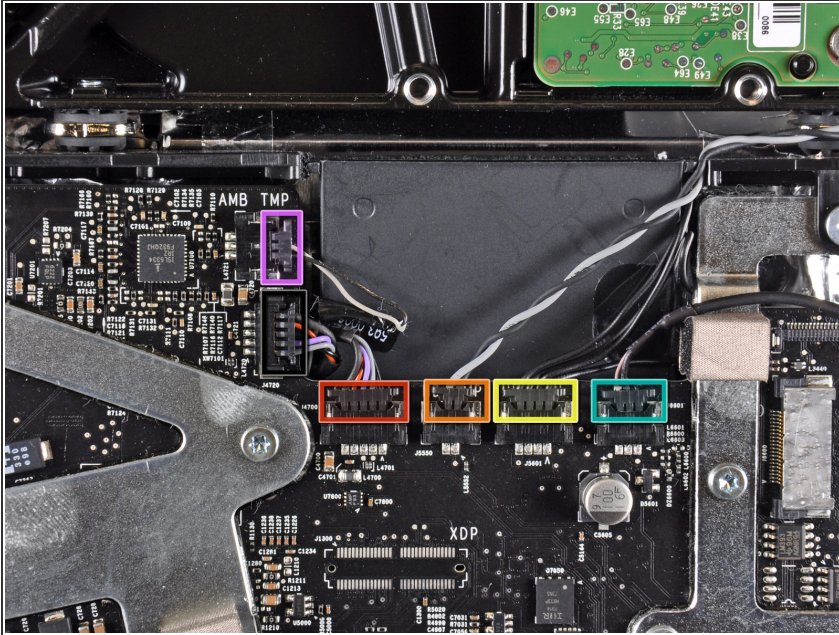
- Disconnect the audio port cable by pulling its connector toward the right side of the iMac.

Step 23



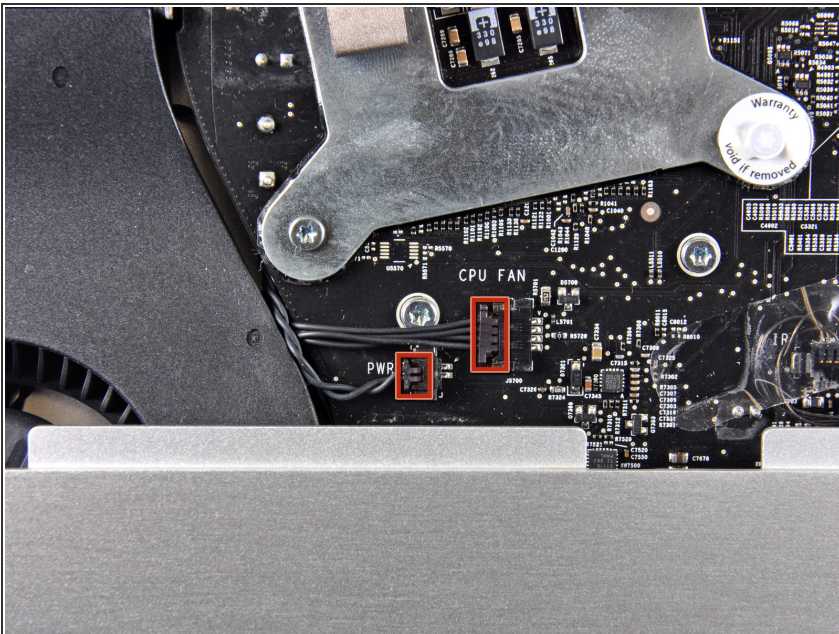
- Disconnect the AirPort cable by lifting its connector off the socket on the logic board.
- ⓘ Lift the connector perpendicular to the face of the logic board.

Step 24



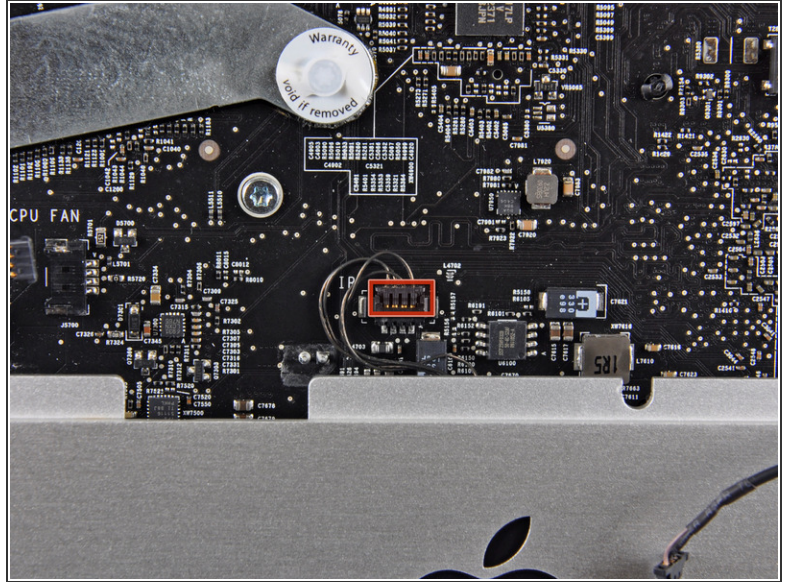
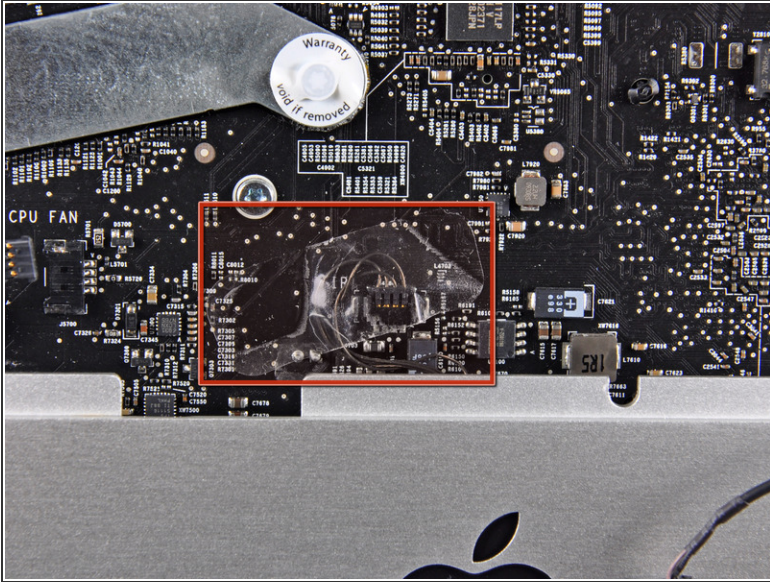
- Disconnect the following cables by pulling their connectors toward the top edge of the iMac:
 - Camera cable
 - Hard drive thermal sensor
 - Hard drive fan
 - Microphone
- Disconnect the following cables by pulling their connectors toward the right edge of the iMac:
 - Ambient temperature sensor
 - Bluetooth cable

Step 25



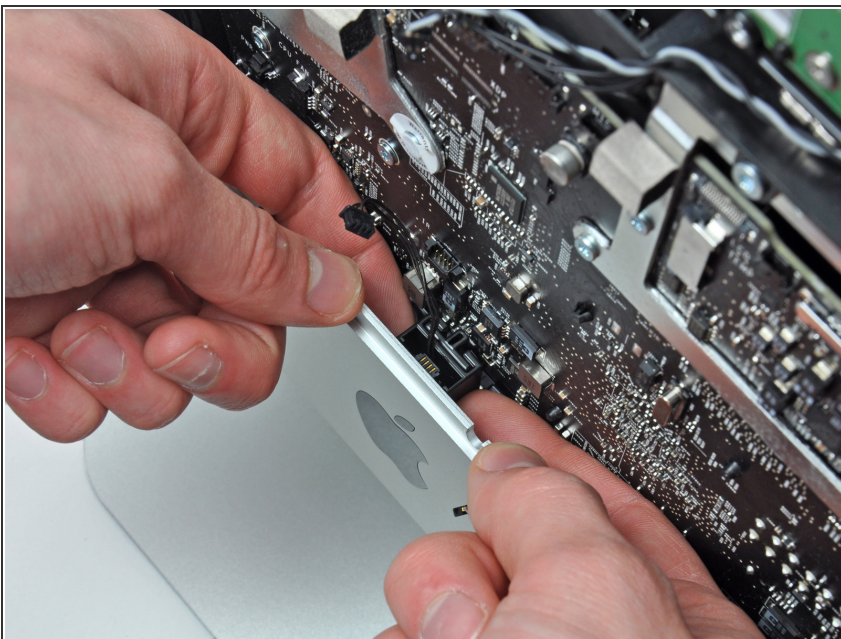
- Disconnect the CPU fan and power button by pulling their connectors toward the left edge of the iMac.

Step 26



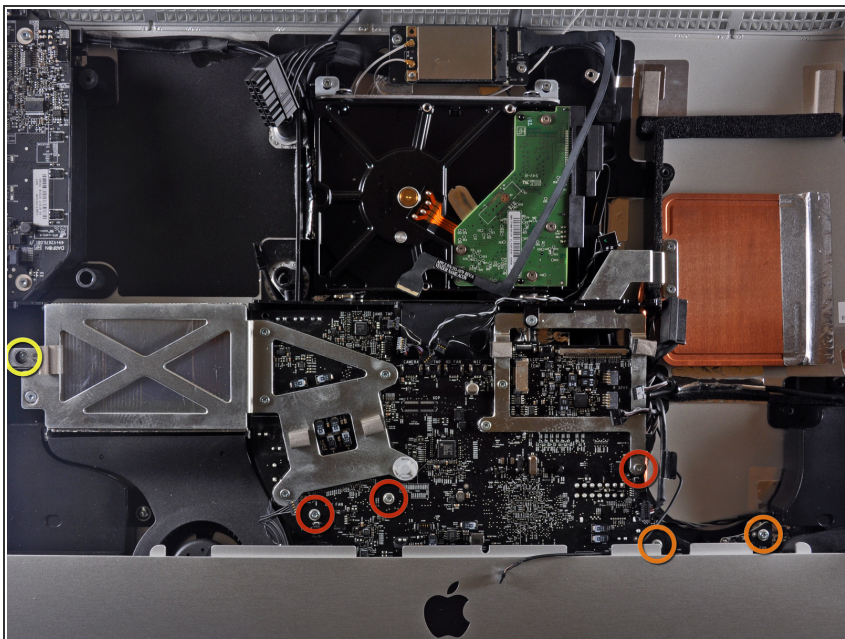
- If present, remove the piece of tape covering the IR sensor connector.
- Disconnect the IR sensor by pulling its connector toward the top edge of the iMac.

Step 27



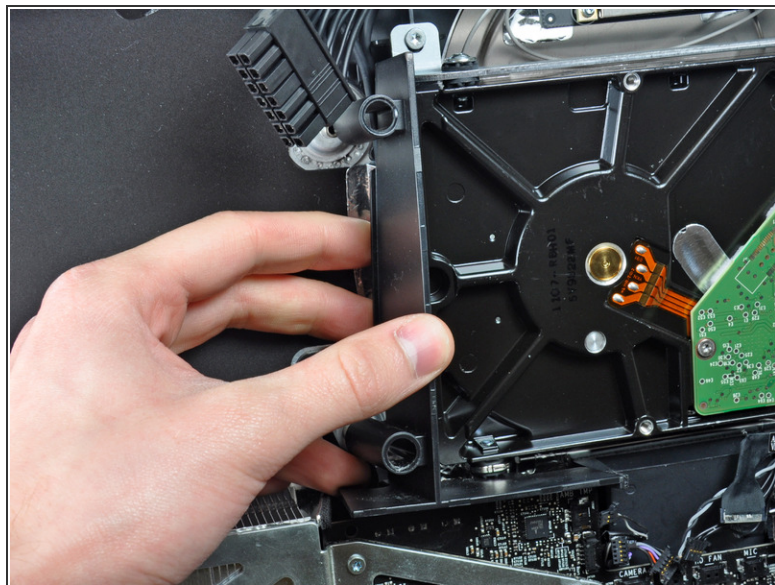
- Use your fingers to lift IR sensor assembly straight up out of the outer case.

Step 28



- Remove the following six screws securing the logic board to the outer case:
 - Three 25 mm T10 Torx
 - Two 21.5 mm T10 Torx
 - One 7 mm T10 Torx

Step 29



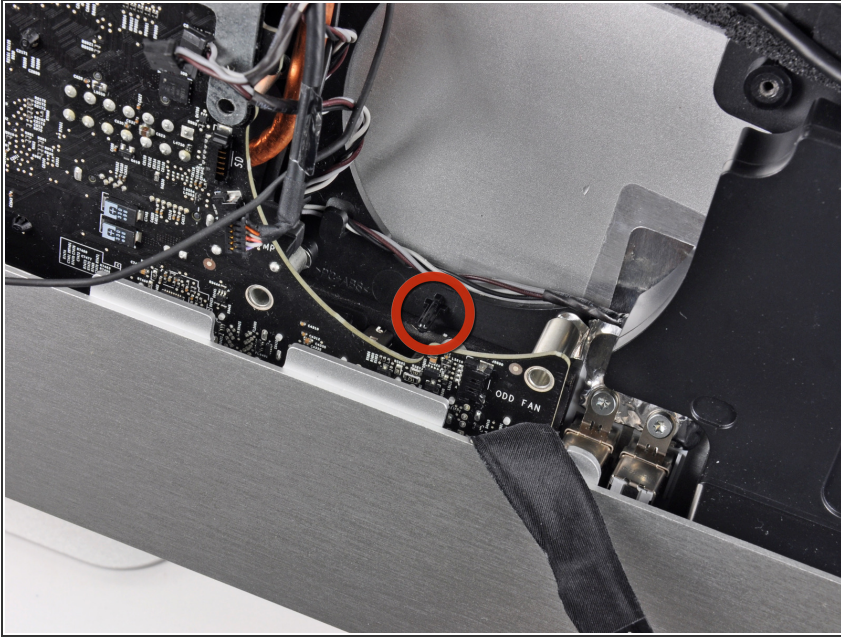
- Remove the plastic ducts from the side of the LED driver board and the hard drive by pulling them away from the outer case.

Step 30



- Carefully remove the aluminum tape attaching the GPU heat sink to the outer case.
- ⓘ It is not necessary to completely remove the aluminum tape from the GPU heat sink.

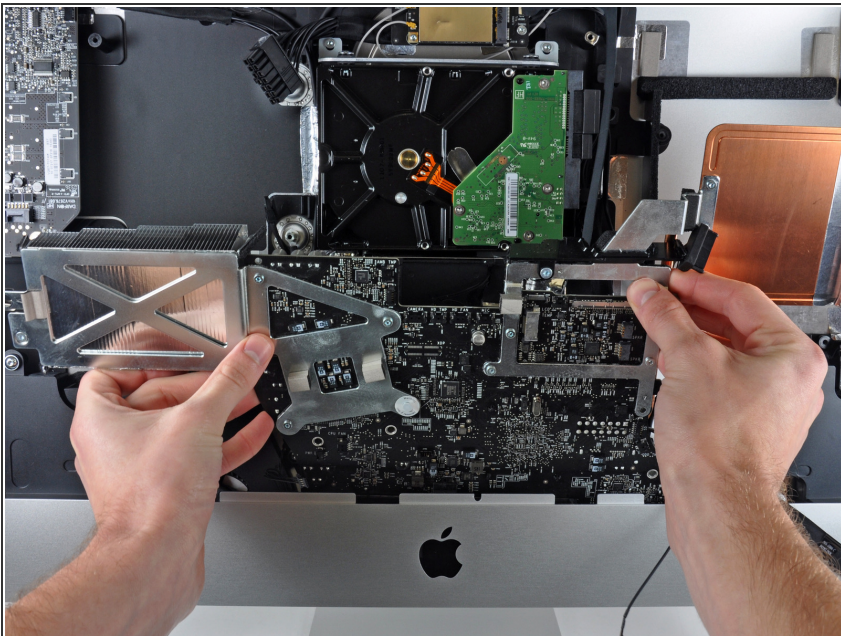
Step 31



⚠ In the following steps, you will maneuver the logic board out from the outer case. In doing so, be aware of the many cables still attaching the logic board to the outer case.

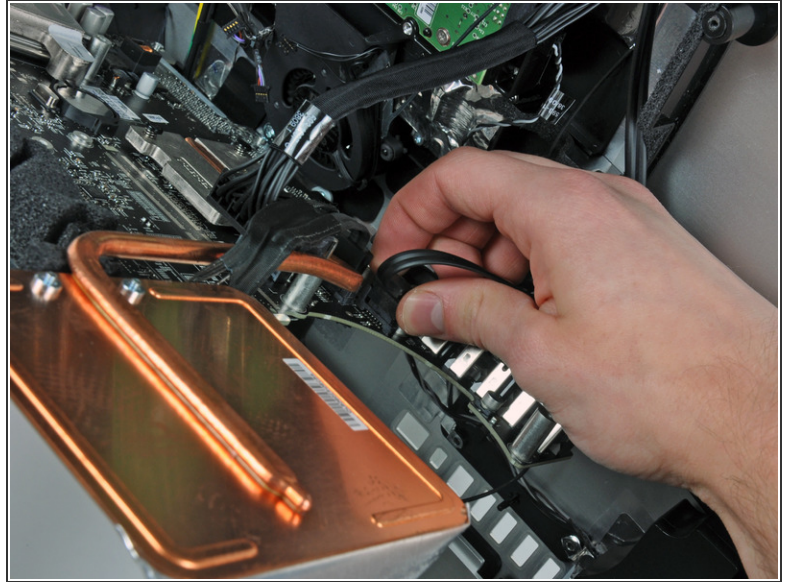
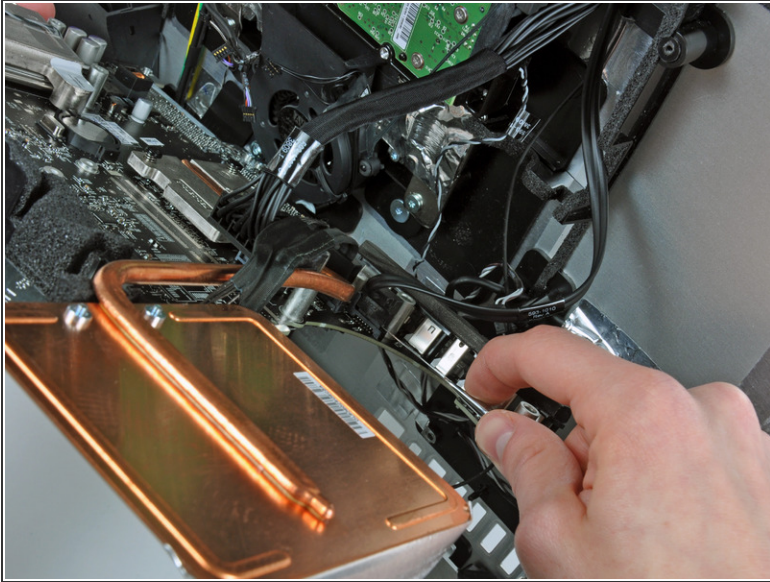
⚠ Be sure the logic board clears the plastic lower optical drive fan mounting pin before lifting it up, as it is easily snapped off.

Step 32



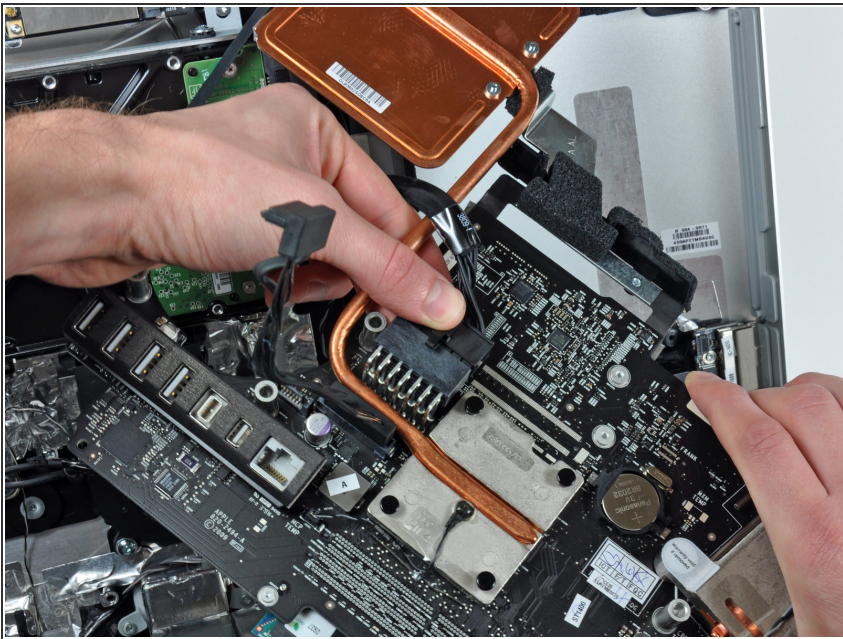
- Carefully pull the logic board slightly away from the outer case.
- While holding the board away from the outer case, rotate the board back and forth while lifting up to release it from the outer case.

Step 33



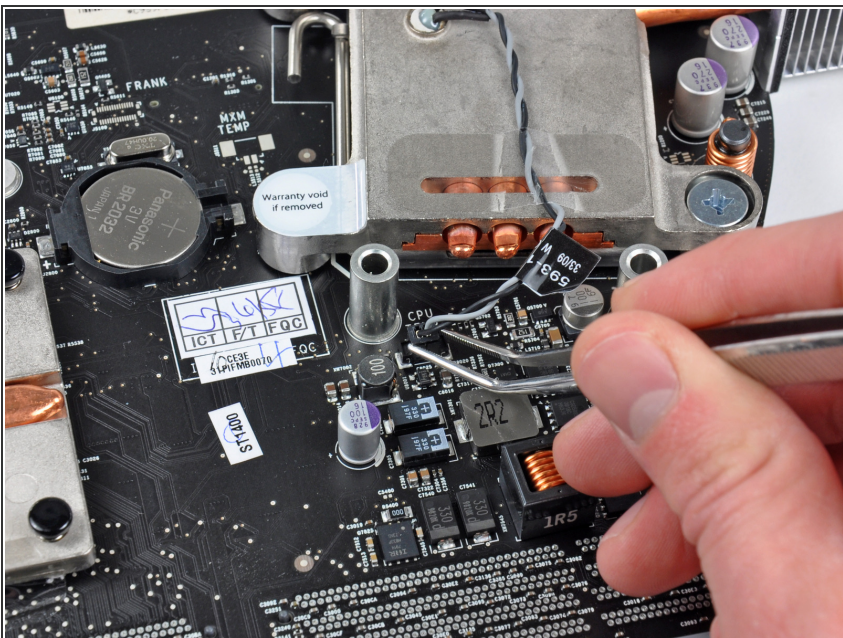
- Now that the lower edge of the board is free from the outer case, rotate the logic board toward yourself to expose its rear face.
- ⓘ The following connector has a tendency to stick in its socket. If so, insert a metal spudger into the gap between the connector and its socket. Twist the spudger to separate the two components.
- Carefully pull the optical drive connector away from its socket on the logic board.
- ⓘ Pull the connector perpendicular to the face of the logic board.

Step 34



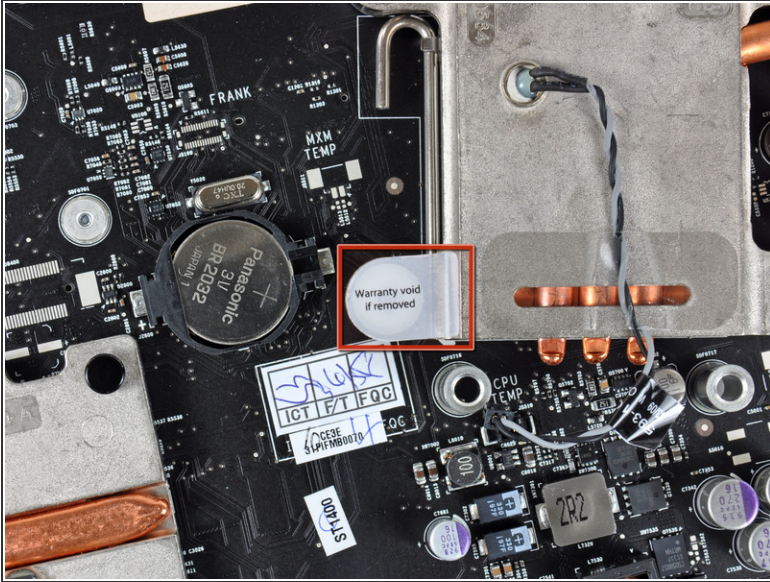
- Disconnect the DC-In cable from the logic board by simultaneously depressing the locking lever on the connector while pulling it away from its socket.
- Remove the logic board from the outer case.

Step 35 — Heat Sink



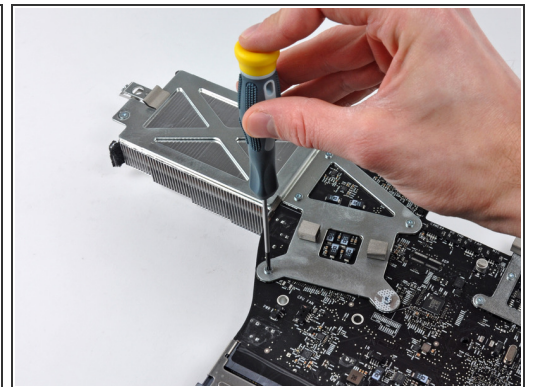
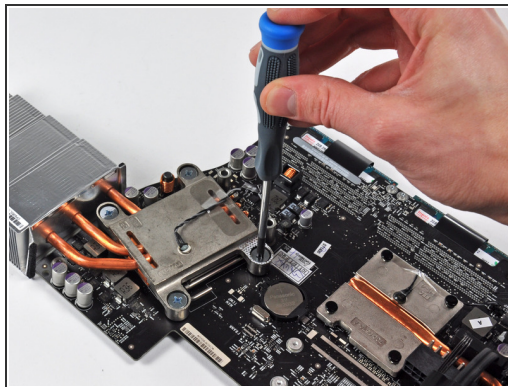
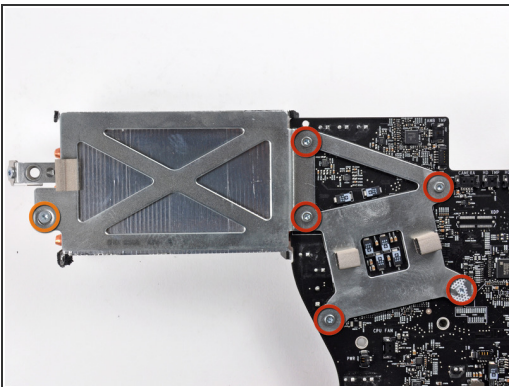
- Use a pair of tweezers to lift the heat sink thermal sensor connector straight up out of its socket on the logic board.

Step 36



- i** If present, remove the "Warranty void if removed" stickers covering one screw on either side of the heat sink.

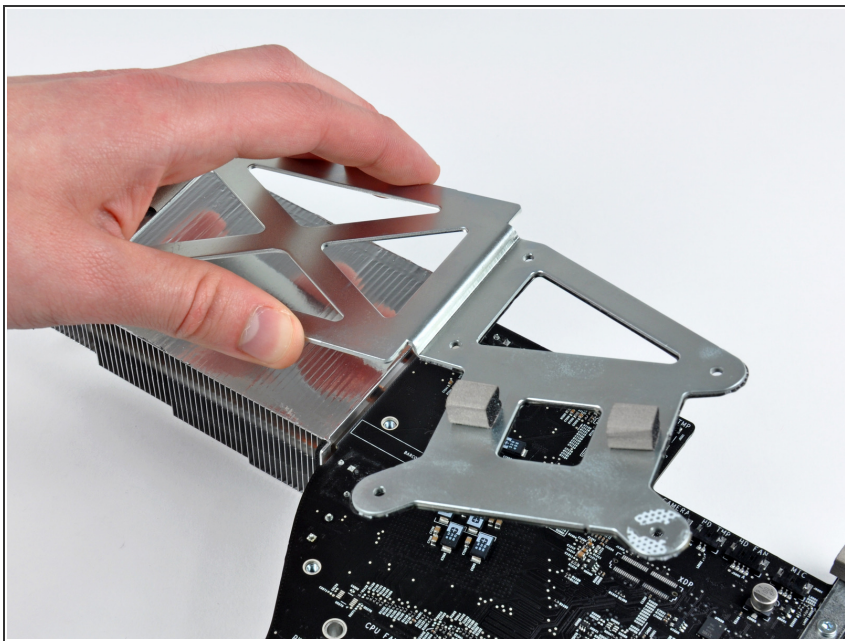
Step 37



- Remove the following six screws securing the heat sink to the logic board:
 - Five 6.5 mm T8 Torx
 - One 7 mm T10 Torx

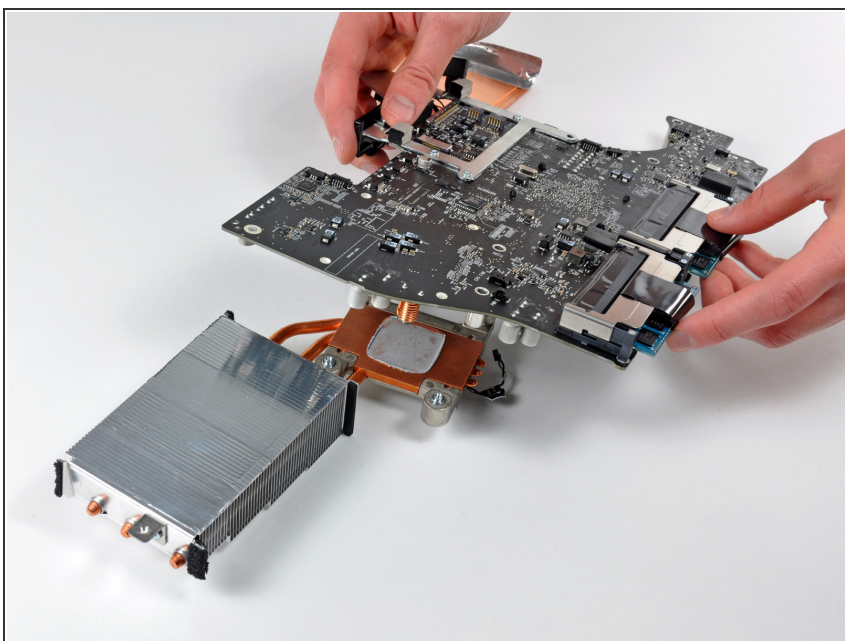
- i** It may be necessary to hold the socket with a Phillips screwdriver on one side of the board while you unscrew the Torx screw on the other side of the board.

Step 38



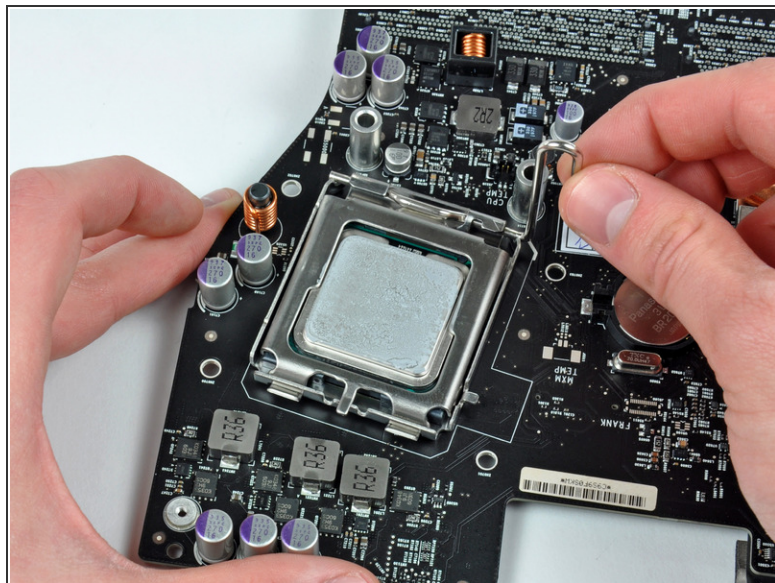
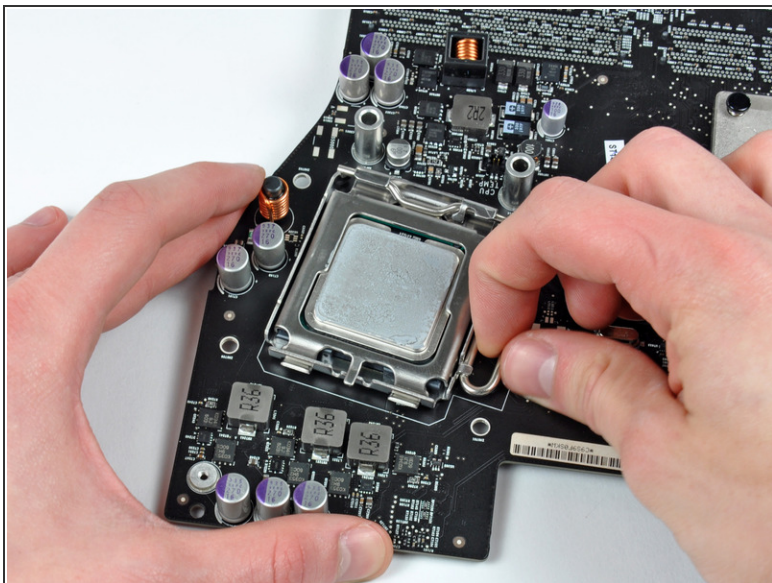
- Lift the heat sink bracket off the logic board.

Step 39



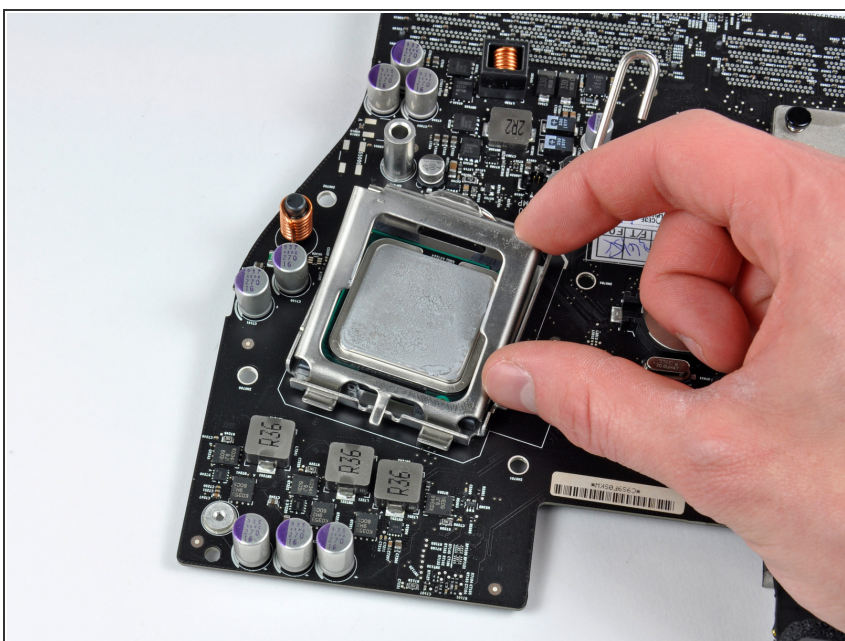
- Carefully lift the logic board off the heat sink.
- ⓘ If the two components appear stuck together, carefully pry them apart with the flat end of a spudger, being careful not to disturb any surface-mount components on the logic board.
- ★ Make sure to apply a new layer of thermal paste before reattaching the heat sink. Our [thermal paste guide](#) makes it easy.

Step 40 — CPU



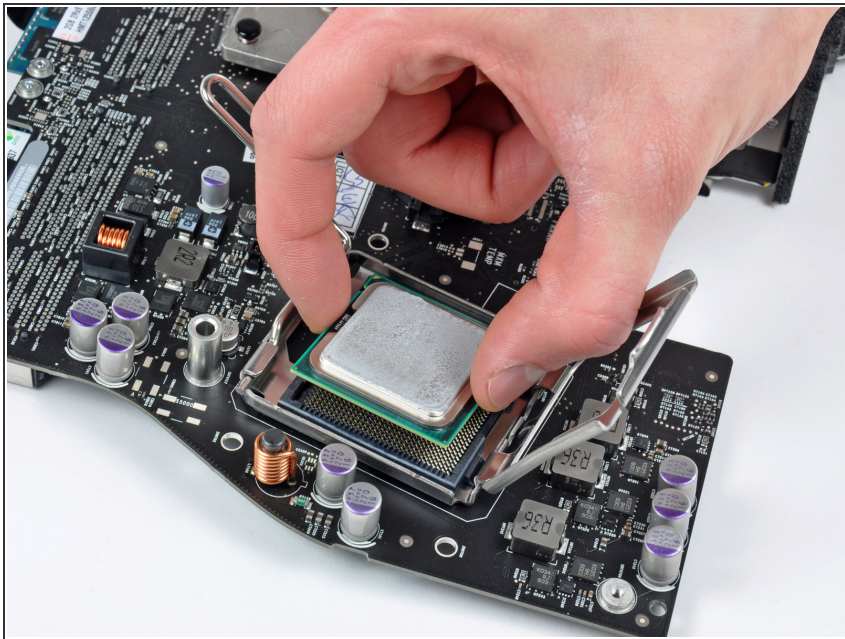
- Carefully pull the CPU retaining bar away from the CPU socket.
- Rotate the bar toward the center of the logic board.

Step 41



- Rotate the CPU clamp away from the CPU.

Step 42



- Carefully lift the CPU straight up off its socket.

⚠ Be sure your new CPU is properly aligned and seated before clamping it back down.

⚠ Make sure to apply a new layer of thermal paste before reattaching the heat sink. Our [thermal paste guide](#) makes it easy.

To reassemble your device, follow these instructions in reverse order.

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